Weather Briefing 20050125, preliminary, 6:30 AM

The upper level pattern continues with a strong trough off the east coast and ridging in the west central portion of the North American continent. The results are: (1) we are in the storm track, albeit somewhat on the north side; and (2) it's unseasonably cold. Temps this morning are 12 F and we just had a minor system (no precip) pass by last night. Another, stronger system is on tap for tomorrow (Wednesday). As with the recent blizzard, there is a low passing south of us, with the favored model (the NMC eta) putting it further north than the large scale GFS (which means more snow and worse weather for us). The Boston weather service office is calling for near-blizzard conditions on Cape Cod (again, poor b___ards). Portsmouth is on the northern edge of this system, with 2 to 4 inches of snow called for, and 10-20 mph northeast winds. Late in the day and into the evening the winds will increase to 15-25 mph and come from the north, with snow ending by midnight. What worries me is the trend of the forecasts – with each forecast for Wednesday the weather conditions become less favorable. My judgment is that the aircraft will be able to operate tomorrow, but we should be aware of the costs of standing up and canceling.

The surface weather through Saturday looks good, except it will be quite cold on Thursday night as the cold air from the large scale trough dips down as a result of a strong high pressure system building over the east. Thursday is also cold (highs in the teens) with strong northwest winds (15-25 mph). These are down the runway, though. Highs on Friday will start to go up (near 20), with some real warming on Saturday (upper 20s). No snow expected until Sunday night or Monday.

Links to the weather service's discussions can be found at
http://bocachica.arc.nasa.gov/PAVE/forecasting.html

Flight level weather through Saturday:

Through Friday, the upper level situation poleward of our area is dominated by the strong trough centered just east of us. This means that the tropopauses will be low, meaning little cloud interference if we go mostly north. The highest clouds will, ironically, be over Greenland because of strong northward flow (above 150 knots on Wednesday at 35kft). This northward flow is upward because isentropes slope upward with latitude in the troposphere. The result is high tropopauses, moist air rising (clouds), and unusually cold temperatures at the tropopause. Notably the jet stream south of us is forecast to have minimal high clouds. So, Wednesday, we are in a very favorable regime from a flight level clouds point of view. This will largely continue through Friday, though by that day significant high clouds are forecast over Hudson's Bay (slightly above 35 kft) and just east of Newfoundland (above 35 kft). See
http://bocachica.arc.nasa.gov/PAVE/rh_omega/TR_peasetp_35kft_day118.pdf
as well as day212, day312, and day412 (Wednesday through Saturday. By Saturday the trough has largely broken down, with the area of tropopauses below 29000 feet much reduced. Still, we have only limited high clouds in our operating region.

Overall cloudiness:

For tomorrow, with the storm, unless we go far south toward Florida we will not find clear skies over nearby oceanic regions. Thursday and Friday are better because of descending motion off the Atlantic US coast. However, we have cold air going over warm water, which means the formation of cumulus – and, based on past satellite imagery, that cumulus is not widely scattered. Near the coast there is colder water and significant clearing. This might be good for OMI (which does not have the exacting locational requirements of TES). Saturday suggests a more significant region of clearing off of our coast, and the flow is offshore down to central New Jersey. It remains to be seen whether the clear zone is expected to be broad enough to accommodate TES.